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STIC Search Report

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STIC Database Tracking Number: 184506

TO: Devesh Khare
Location: 5c35 / 5c18
Thursday, April 13, 2006
Art Unit: 1623
Phone: 571-272-0653
Serial Number: 10 / 506469

From: Jan Delaval
Location: Biotech-Chem Library
Remsen 1a51
Phone: 571-272-2504
jan.delaval@uspto.gov

Search Notes

184506
Access DB# _____

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester= full Name: Devesh Khare Examiner #: 77931 Date: 04/06/2006

Art Unit: 1623 Phone Number 272-0653 Serial Number: 10/506,469

Mail Box: Remsen 5C18 and Bldg/Room Location: 5C35 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be search. Include the elected species or structures, key words, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Novel branched sialo-sugar molecules and antiviral agents

Inventors (please provide full names): Yasuo Suzuki and Ilpal Jwa.

Earliest priority Filing Date: 2/28/2003

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please carry out a search on the attached claim sheet; examiner's hints provided.

Thank you.

STAFF USE ONLY

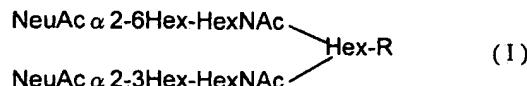
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Date Searcher Picked Up: 4/13/06
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Type of Search
NA Sequence (#) _____
AA Sequence (#) _____
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Bibliographic _____
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Fulltext _____
Patent Family _____
Other _____

Vendors and cost where applicable
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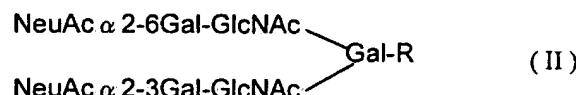
PTO-1590 (1-2000)

11. (New) A novel branched sialo-sugar molecule represented by the following formula (I):



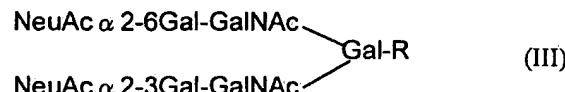
(wherein NeuAc represents *N*-acetylneuraminic acid in which the hydroxyl group, the carboxyl group and the amido group may be chemically modified with a halogen group, an alkyl group or an acyl group, either the same group or separate groups, Hex represents hexose, HexNAc represents *N*-acetylhexosamine and R represents a substrate selected from among a hydrogen atom, a hydrocarbon chain, a sugar chain, a lipid, a protein and a synthetic polymer, and R may have a substituent).

15. (New) A novel branched sialo-sugar molecule represented by the following formula (II):



(wherein NeuAc represents *N*-acetylneuraminic acid in which the hydroxyl group, the carboxyl group and the amido group may be chemically modified with a halogen group, an alkyl group or an acyl group, either the same group or separate groups, Gal represents galactose, GlcNAc represents *N*-acetylglucosamine and R represents a substrate selected from among a hydrogen atom, a hydrocarbon chain, a sugar chain, a lipid, a protein and a synthetic polymer, and R may have a substituent).

16. (New) A novel branched sialo-sugar molecule represented by the following formula (III):



(wherein NeuAc represents *N*-acetylneuraminic acid in which the hydroxyl group, the carboxyl group and the amido group may be chemically modified with a halogen group, an alkyl group or an acyl group, either the same group or separate groups, Gal represents galactose, GalNAc represents *N*-acetylgalactosamine and R represents a substrate selected from among a hydrogen atom, a hydrocarbon chain, a sugar chain, a lipid, a protein and a synthetic polymer, and R may have a substituent).

Examiner's hints and search points:

1. In such a compound, the type of Hex and HexNAc is not particularly limited. Preferably, Hex is galactose (Gal), HexNAc is N-acetylgalactosamine (GalNAc) or N-acetylglucosamine (GluNAc). In addition, NeuAc may be the one in which the hydroxyl group, the carboxyl group and the amido group may be chemically modified with a halogen group (F, Cl, Br or I), an alkyl group (C₂ to C₂₀) or an acyl group (C₂ to C₂₀).

2. Further, in the novel branched sialo-sugar molecule of the invention of this application, the linkage between N-acetylneuraminic acid and hexose (or galactose) may not only be an O-glycoside linkage occurring in nature but also be chemically converted into an S-glycoside, a Se-glycoside linkage or the like.

3. Neuraminic acid is also known as Sialic acid.

4. The following partial structures may help the search:

- **GSC-273 (synthetic)**

Neu5Ac α 2-3Gal β 1-4GlcNAc β 1-3Gal β 1-4Glc β 1-0CH(C₁₄H₂₉)₂

- **GSC-275 (synthetic)**

Neu5Ac α 2-6 Gal β 1-4GlcNAc β 1-3Gal β 1-4Glc β 1-0CH(C₁₄H₂₉)₂



STIC SEARCH RESULTS FEEDBACK FORM

Biotech-Chem Library

Questions about the scope or the results of the search? Contact **the searcher or contact:**

**Mary Hale, Information Branch Supervisor
22507, Remsen 1d86**

Voluntary Results Feedback Form

➤ *I am an examiner in Workgroup:* *Example: 1610*

➤ *Relevant prior art found, search results used as follows:*

- 102 rejection
- 103 rejection
- Cited as being of interest.
- Helped examiner better understand the invention.
- Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- Foreign Patent(s)
- Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ *Relevant prior art not found:*

- Results verified the lack of relevant prior art (helped determine patentability).
- Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to STIC/Biotech-Chem Library CM1 – Circ. Desk



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STRUCTURE FILE UPDATES: 11 APR 2006 HIGHEST RN 880129-32-8
DICTIONARY FILE UPDATES: 11 APR 2006 HIGHEST RN 880129-32-8

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TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

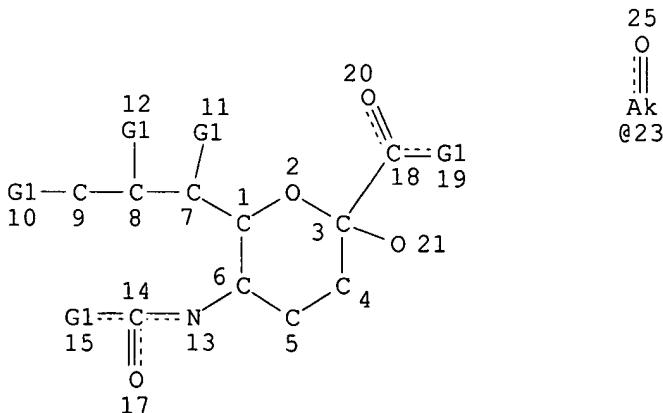
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* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*****
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Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

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L22 STR

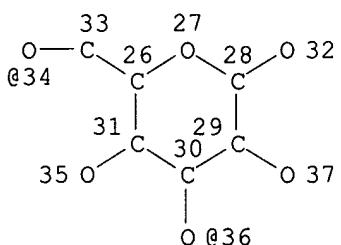
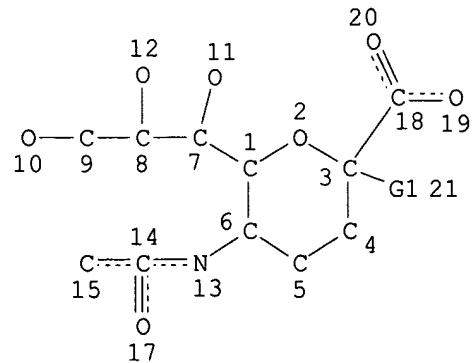


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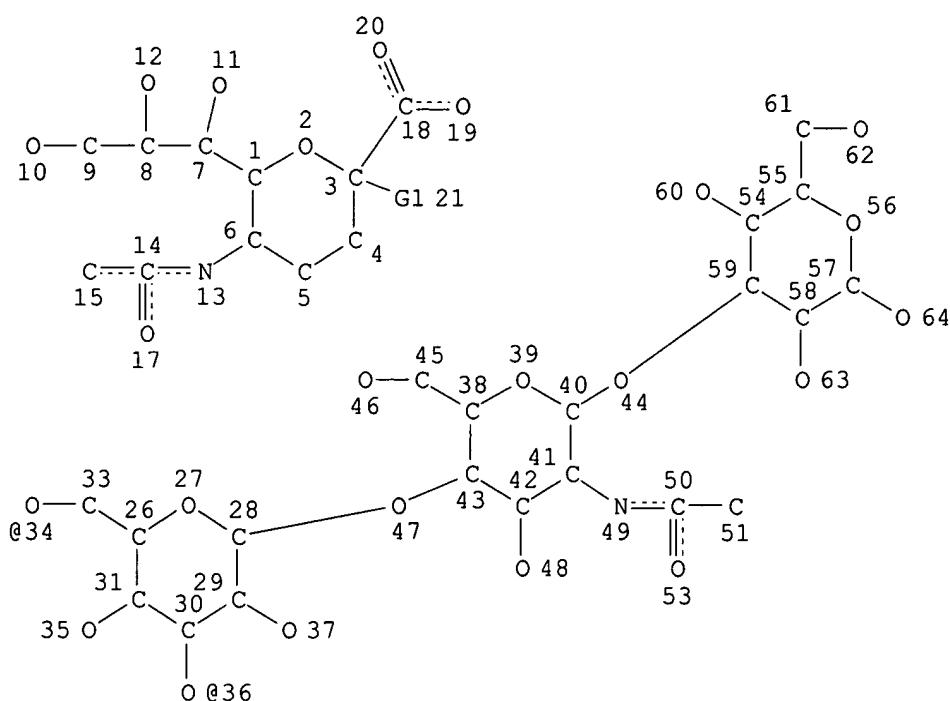
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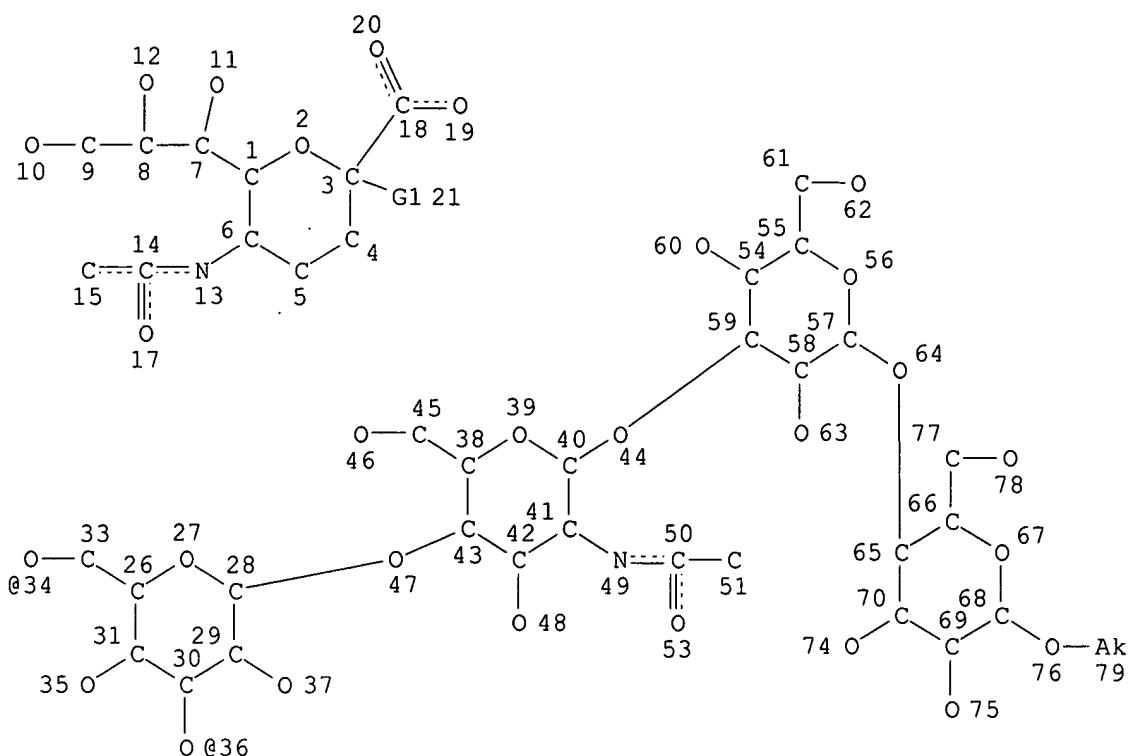
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=> d 137 ide can tot

L37 ANSWER 1 OF 4 REGISTRY COPYRIGHT 2006 ACS on STN

RN 259540-03-9 REGISTRY

ED Entered STN: 19 Mar 2000

CN β -D-Glucopyranoside, 2-tetradecylhexadecyl O-[N-(hydroxyacetyl)- α -neuraminosyl]-(2 \rightarrow 6)-O- β -D-galactopyranosyl-(1 \rightarrow 4)-O-2-(acetylamino)-2-deoxy- β -D-glucopyranosyl-(1 \rightarrow 3)-O- β -D-galactopyranosyl-(1 \rightarrow 4)-(9CI) (CA INDEX NAME)

FS STEREOSEARCH

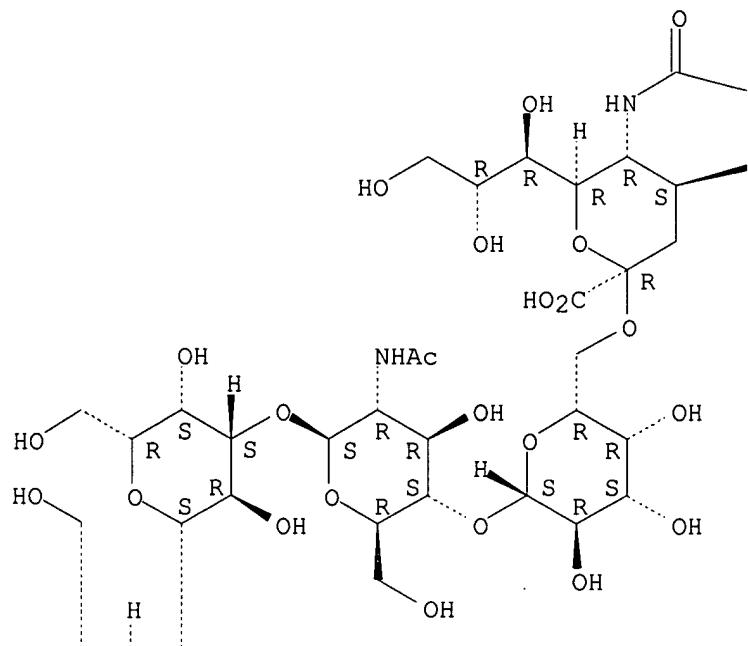
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SR CA

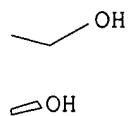
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Absolute stereochemistry. Rotation (+).

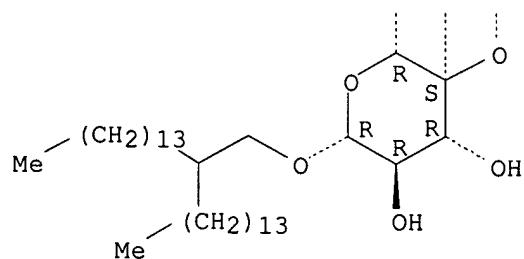
PAGE 1-A



PAGE 1-B



PAGE 2-A



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jan delaval and noble jarrell - 13 april 2006

2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

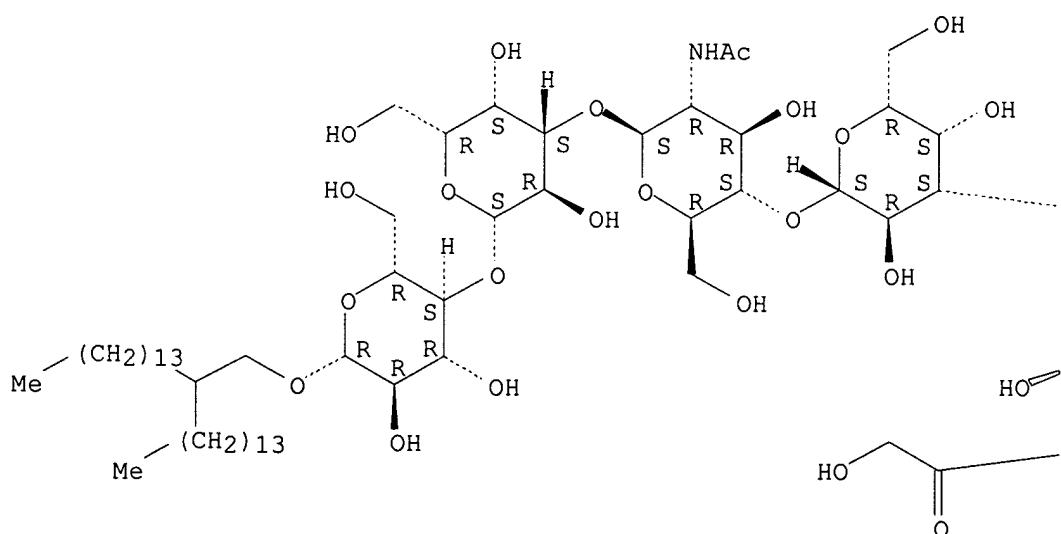
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REFERENCE 2: 132:177974

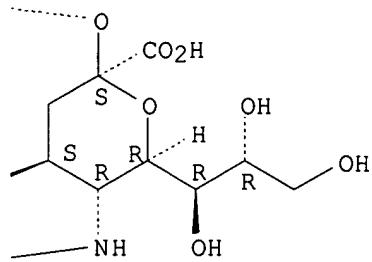
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RN 259540-02-8 REGISTRY
ED Entered STN: 19 Mar 2000
CN β -D-Glucopyranoside, 2-tetradecylhexadecyl O-[N-(hydroxyacetyl)-
 α -neuraminosyl]-(2 \rightarrow 3)-O- β -D-galactopyranosyl-
(1 \rightarrow 4)-O-2-(acetylamino)-2-deoxy- β -D-glucopyranosyl-
(1 \rightarrow 3)-O- β -D-galactopyranosyl-(1 \rightarrow 4)- (9CI) (CA INDEX
NAME)
FS STEREOSEARCH
MF C67 H122 N2 O30
SR CA
LC STN Files: CA, CAPLUS, CASREACT

Absolute stereochemistry. Rotation (+).

PAGE 1-A



PAGE 1-B



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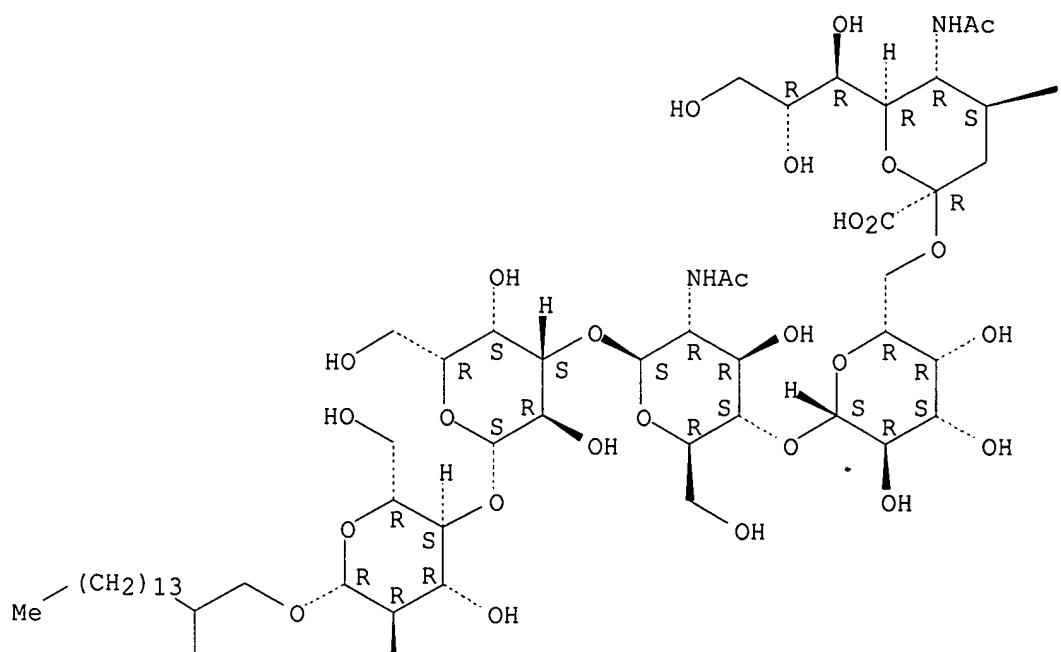
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REFERENCE 2: 132:177974

L37 ANSWER 3 OF 4 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 259540-01-7 REGISTRY
 ED Entered STN: 19 Mar 2000
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 LC STN Files: CA, CAPLUS

Absolute stereochemistry.

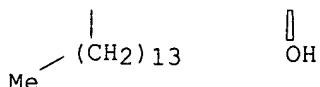
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PAGE 1-B



PAGE 2-A



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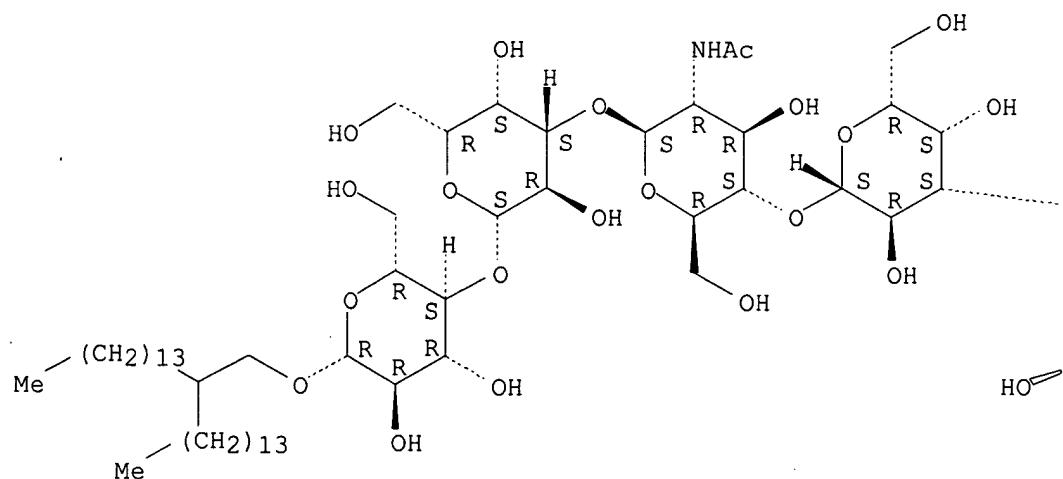
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L37 ANSWER 4 OF 4 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 259540-00-6 REGISTRY
 ED Entered STN: 19 Mar 2000
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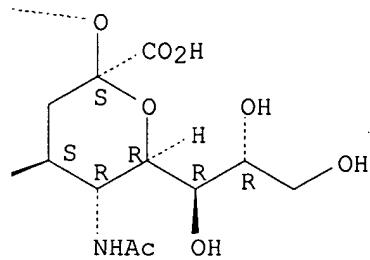
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 LC STN Files: CA, CAPLUS

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



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 E SUZUKI Y/AU
 L3 1767 S E3-E8
 L4 1527 S E78-E80
 E SUZUKI N/AU
 L5 219 S E20
 E YASUO/AU
 L6 1 S E3
 L7 3 S E92
 E JWA/AU
 L8 3 S E6, E7
 E ILPAL/AU
 E JWA/AU
 L9 3529 S L2-L8
 L10 1 S L9 AND ?SIALOPOLYSACCHARID?
 L11 21 S L9 AND NEUAC
 L12 1 S L11 AND HEXNAC
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 L14 1 S L10, L12, L13
 L15 1 S L11 AND C08B/IPC, IC, ICM, ICS
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 L18 2 S L11 AND CARBOHYDRAT?/SC, SX
 SEL RN

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 SAV TEMP L24 KHA506/A
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 SAV L35 TEMP KHA506C/A
 L36 15 S L35 AND 5/NR
 L37 4 S L36 AND 2/N
 L38 441 S ?TETRADECYLHEXAD?/CNS
 L39 45 S L38 AND ?NEURAMIN?/CNS
 L40 41 S L39 NOT L37
 L41 9 S L40 AND 5/NR
 L42 0 S L38 AND UNSPECIFIED

L43 0 S L38 AND IDS/CI
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FILE 'HCAPLUS' ENTERED AT 15:08:41 ON 13 APR 2006
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 L46 1 S L1-L18 AND L45
 L47 4 S L18,L45,L46
 L48 1 S NEUAC ALPHA 2 6HEX HEXNAC
 L49 4 S L47,L48

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=> d 149 all hitstr tot

L49 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 2003:945282 HCAPLUS
 DN 140:217899
 ED Entered STN: 04 Dec 2003
 TI Synthesis of Lacto- and Neolacto-series Ganglioside Analogs Containing N-Glycolylneuraminic Acid: Probes for Investigation of Specific Receptor Structures Recognized by Influenza A Viruses
 AU Fukunaga, Kyoko; Toyoda, Tsuyoshi; Ishida, Hideharu; Kiso, Makoto
 CS Department of Applied Bioorganic Chemistry, Gifu University, Gifu, Japan
 SO Journal of Carbohydrate Chemistry (2003), 22(9), 919-937
 CODEN: JCACDM; ISSN: 0732-8303
 PB Marcel Dekker, Inc.
 DT Journal
 LA English
 CC 33-8 (Carbohydrates)

OS Section cross-reference(s): 6
 OS CASREACT 140:217899

AB Sialic acids are essential components of host-cell surface receptors for infection of influenza virus. To investigate the specific receptor structures recognized by various influenza A viruses, a series of lacto- and neolacto-series ganglioside analogs containing N-glycolylneuraminic acid (Neu5Gc) have been synthesized. The pentasaccharide structure of Neu5Gc- α -(2 \rightarrow 3)/(2 \rightarrow 6)-lactotetraose [IV3(6)Neu5GcLcOse] and Neu5Gc- α (2 \rightarrow 3)/(2 \rightarrow 6)-neolactotetraose [IV3(6)Neu5GcnLcOse] were constructed by glycosylation of the suitably protected trisaccharide acceptors with Neu5Gc- α (2 \rightarrow 3)/(2 \rightarrow 6)-Gal trichloroacetimidate donors. Transformation of the 2-(trimethylsilyl)ethyl group at the reducing end into the trichloroacetimidate group gave a series of Neu5Gc- α (2 \rightarrow 3)/(2 \rightarrow 6)-lacto- and neolactotetraose donors, which were coupled with 2-(tetradecyl)hexadecanol to give the corresponding glycolipids. Finally, the complete removal of the O-acyl groups and saponification of the Me ester group gave the desired ganglioside analogs.

ST ganglioside analog lactoganglioside neolactoganglioside glycolylneuraminic acid prep receptor influenza; virus influenza A receptor lactoganglioside neolactoganglioside glycolylneuraminic acid prep

IT Receptors
 RL: BSU (Biological study, unclassified); BIOL (Biological study) (for influenza A virus; synthesis of lacto- and neolacto-series ganglioside analogs containing N-glycolylneuraminic acid as probes for study of specific receptor structures recognized by influenza A viruses)

IT Influenza A virus
 (synthesis of lacto- and neolacto-series ganglioside analogs containing N-glycolylneuraminic acid as probes for study of specific receptor structures recognized by influenza A viruses)

IT Gangliosides
 RL: BSU (Biological study, unclassified); BIOL (Biological study) (synthesis of lacto- and neolacto-series ganglioside analogs containing N-glycolylneuraminic acid as probes for study of specific receptor structures recognized by influenza A viruses)

IT 545-06-2, Trichloroacetonitrile 121360-14-3 128500-20-9 158847-14-4
 160711-39-7 299179-54-7 299179-62-7 299179-76-3
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (synthesis of lacto- and neolacto-series ganglioside analogs containing N-glycolylneuraminic acid as probes for study of specific receptor structures recognized by influenza A viruses)

IT 666748-27-2P 666748-28-3P 666748-30-7P 666748-31-8P 666748-32-9P
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 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (synthesis of lacto- and neolacto-series ganglioside analogs containing N-glycolylneuraminic acid as probes for study of specific receptor structures recognized by influenza A viruses)

IT 259540-02-8P 259540-03-9P 666748-29-4P 666748-33-0P
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 RL: SPN (Synthetic preparation); PREP (Preparation)
 (synthesis of lacto- and neolacto-series ganglioside analogs containing N-glycolylneuraminic acid as probes for study of specific receptor structures recognized by influenza A viruses)

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

- (1) Ando, T; Trends Glycosci Glycotechnol (TIGG) 2001, V13, P573 HCPLUS
- (2) Hara, S; Anal Biochem 1987, V164, P138 HCPLUS
- (3) Hasegawa, A; Biosci Biotechnol Biochem 1995, V59, P1091 HCPLUS
- (4) Hasegawa, A; Carbohydrates, Synthetic Methods and Applications in Medicinal Chemistry 1992, P243 HCPLUS
- (5) Hasegawa, A; J Carbohydr Chem 1991, V10, P439 HCPLUS
- (6) Hasegawa, A; J Carbohydr Chem 1996, V15, P623 HCPLUS
- (7) Ito, T; J Virol 1997, V71, P3357 HCPLUS
- (8) Ito, T; J Virol 2000, V74, P9300 HCPLUS
- (9) Ito, T; Virology 1997, V227, P493 HCPLUS
- (10) Jansson, K; J Org Chem 1988, V53, P5629 HCPLUS
- (11) Kameyama, A; Carbohydr Res 1990, V200, P269 HCPLUS
- (12) Magnusson, G; Trends Glycosci Glycotechnol (TIGG) 1992, V4, P358 HCPLUS
- (13) Masuda, H; FEBS Lett 1999, V464, P71 HCPLUS
- (14) Murase, T; J Carbohydr Chem 1989, V8, P265 HCPLUS
- (15) Schmidt, R; Synthesis 1981, P885 HCPLUS
- (16) Suzuki, T; FEBS Lett 1997, V404, P192 HCPLUS
- (17) Suzuki, Y; J Virol 2000, V74, P11825 HCPLUS
- (18) Suzuki, Y; Prog Lipid Res 1994, V33, P429 HCPLUS
- (19) Suzuki, Y; Virology 1992, V189, P121 HCPLUS
- (20) Tanahashi, E; J Carbohydr Chem 2000, V19, P747 HCPLUS
- (21) Terada, T; Carbohydr Res 1994, V259, P201 HCPLUS
- (22) Varki, A; Glycobiology 1992, V2, P25 HCPLUS
- (23) Webster, R; Microbiol Rev 1992, V56, P152 MEDLINE

IT 259540-02-8P 259540-03-9P

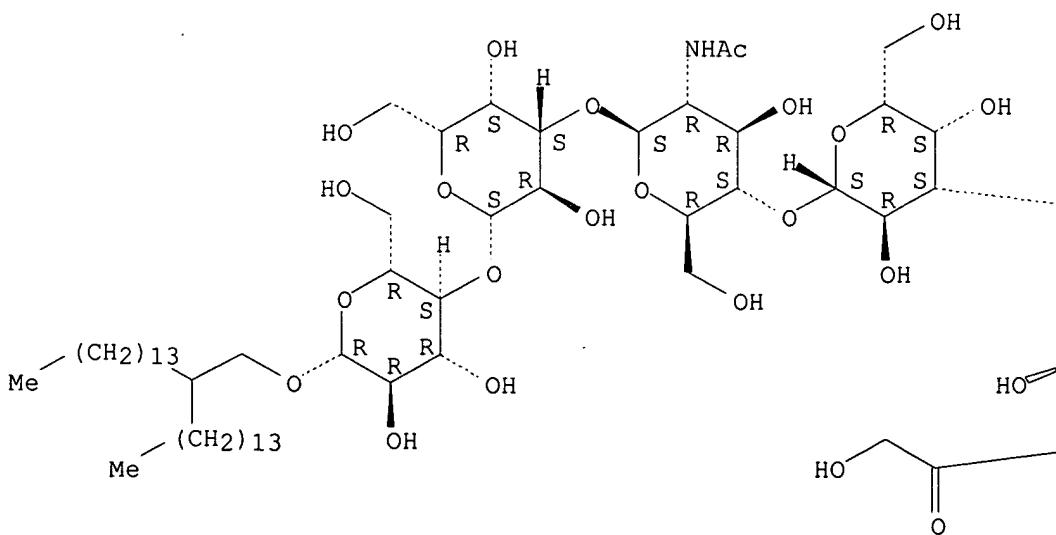
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of lacto- and neolacto-series ganglioside analogs containing
N-glycolylneuraminic acid as probes for study of specific receptor
structures recognized by influenza A viruses)

RN 259540-02-8 HCPLUS

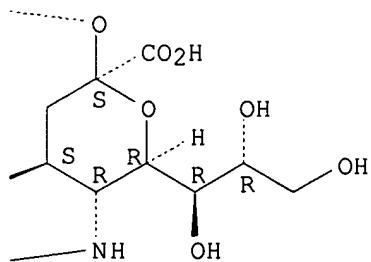
CN β -D-Glucopyranoside, 2-tetradecylhexadecyl O-[N-(hydroxyacetyl)-
 α -neuraminosyl]-(2 \rightarrow 3)-O- β -D-galactopyranosyl-
(1 \rightarrow 4)-O-2-(acetylamino)-2-deoxy- β -D-glucopyranosyl-
(1 \rightarrow 3)-O- β -D-galactopyranosyl-(1 \rightarrow 4)- (9CI) (CA INDEX
NAME)

Absolute stereochemistry. Rotation (+).

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PAGE 1-B

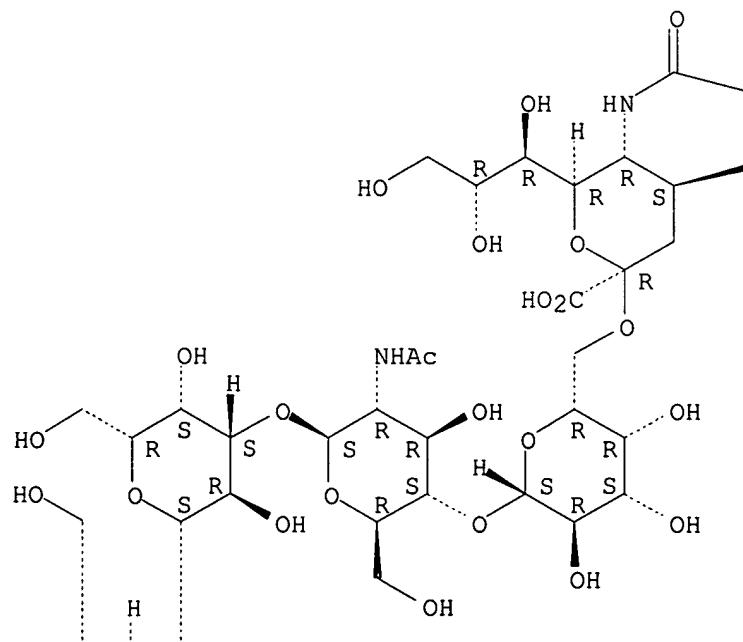


RN 259540-03-9 HCPLUS

CN β -D-Glucopyranoside, 2-tetradecylhexadecyl O-[N-(hydroxyacetyl)- α -neuraminosyl]-(2 \rightarrow 6)-O- β -D-galactopyranosyl-(1 \rightarrow 4)-O-2-(acetylamino)-2-deoxy- β -D-glucopyranosyl-(1 \rightarrow 3)-O- β -D-galactopyranosyl-(1 \rightarrow 4)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

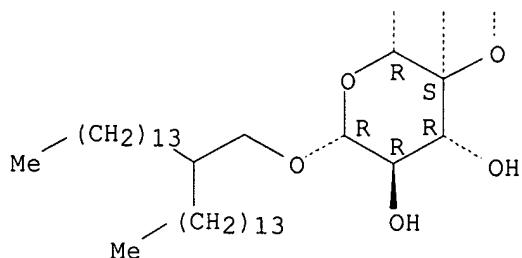
PAGE 1-A



PAGE 1-B



PAGE 2-A



L49 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 2003:719521 HCAPLUS
 DN 139:250285
 ED Entered STN: 14 Sep 2003
 TI Novel branched sialo-sugar molecules and antiviral agents using the same
 IN Suzuki, Yasuo; Jwa, Ilpal
 PA Japan Science and Technology Corporation, Japan
 SO PCT Int. Appl., 62 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 IC ICM C08B0037-00
 ICS A61K0031-715; A61P0031-16
 CC 63-6 (Pharmaceuticals)
 Section cross-reference(s): 44
 FAN.CNT 1

Aplicant

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003074570	A1	20030912	WO 2003-JP2338	20030228
W: CN, JP, US				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR				
EP 1489101	A1	20041222	EP 2003-743526	20030228
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, CY, TR, BG, CZ, EE, HU, SK				
CN 1639199	A	20050713	CN 2003-805152	20030228
US 2005234010	A1	20051020	US 2004-506469	20041015
PRAI JP 2002-57909	A	20020304		
WO 2003-JP2338	W	20030228		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2003074570	ICM	C08B0037-00
	ICS	A61K0031-715; A61P0031-16

EP 1489101 IPCI C08B0037-00 [ICM,7]; A61K0031-715 [ICS,7]; A61P0031-16 [ICS,7]
 IPCR A61K0031-715 [I,A]; A61K0031-715 [I,C]; C07H0003-00 [I,C]; C07H0003-06 [I,A]
 ECLA A61K031/715; C07H003/06
 CN 1639199 IPCI C08B0037-00 [ICM,7]; A [ICS,7]
 US 2005234010 IPCI A61K0031-739 [ICM,7]; A [ICS,7]
 IPCR A61K0031-739 [I,A]; A61 [I,A]; A61K0039-00 [I,C]
 NCL 514/054.000

No Compounds available for this Patent

AB It is intended to provide novel branched sialo-sugar mols. represented by (NeuAc.alpha.2-6Hex-HexNAc)
)2Hex-R (wherein NeuAc represents N-acetylneuraminate in which the hydroxyl, carboxyl and amido may be chemically modified with halogeno, alkyl and acyl either identically or sep.; Hex represents hexose; HexNAc represents N-acetylhexosamine; and R represents hydrogen, hydrocarbyl, a sugar chain, or a substrate selected from among lipids, proteins and synthetic polymers, each optionally being substituted; provided that the bond between N-acetylneuraminate and hexose may be either an O-glycoside bond occurring in nature or a chemical converted bond such as an S-glycoside or Se-glycoside bond) as substances which respond to variations in the host area of influenza viruses as well as variations in antigenicity and are useful as adsorbents in drugs and virus elimination filters whereby the infection with type A influenza virus and type B influenza virus originating in any animals including humans can be prevented.

ST antiviral antigenicity branched sialo sugar filter adsorbent

IT Adsorbents

Antiviral agents

Drugs

Filters

Influenza virus

(isolation and evaluation of branched sialo-sugar mols. and antiviral agents using the same)

IT Polysaccharides, biological studies

RL: BUU (Biological use, unclassified); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(sialopolysaccharides; isolation and evaluation of branched sialo-sugar mols. and antiviral agents using the same)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Strecker, G; European Journal of Biochemistry 1977, V75(2), P391 HCPLUS
- (2) Unverzagt, G; Carbohydrate Research 1994, V251, P285
- (3) van Pelt, J; Biological Chemistry Hoppe-Seyler 1989, V370(3), P191 HCPLUS

L49 ANSWER 3 OF 4 HCPLUS COPYRIGHT 2006 ACS on STN

AN 1999:807034 HCPLUS

DN 132:177974

ED Entered STN: 22 Dec 1999

TI Substitution of amino acid residue in influenza A virus hemagglutinin affects recognition of sialyl-oligosaccharides containing N-glycolylneuraminic acid

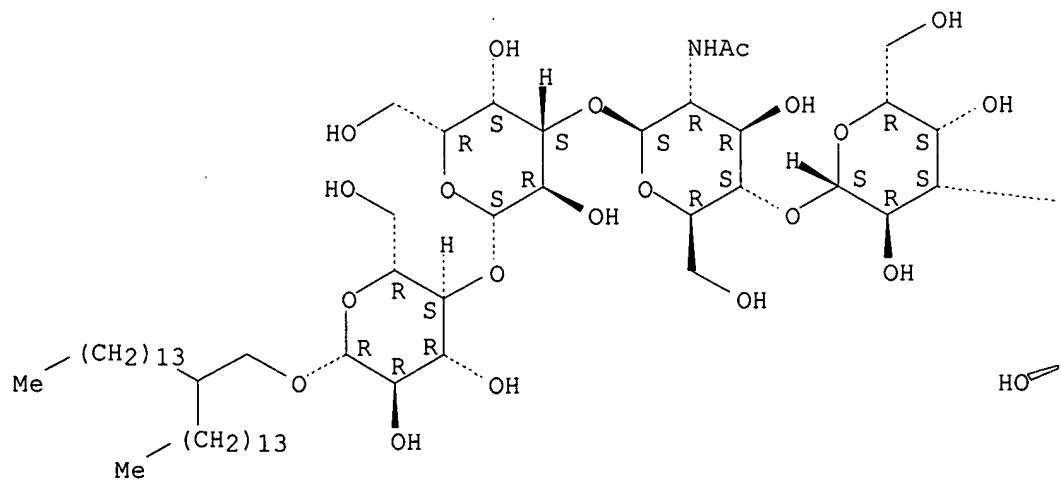
AU Masuda, H.; Suzuki, T.; Sugiyama, Y.; Horike, G.; Murakami, K.; Miyamoto, D.; Jwa Hidari, K. I.-P.; Ito, T.; Kida, H.; Kiso, M.; Fukunaga, K.; Ohuchi, M.; Toyoda, T.; Ishihama, A.; Kawaoka, Y.; Suzuki, Y.
 CS Department of Biochemistry, School of Pharmaceutical Sciences, University of Shizuoka, Shizuoka, Japan
 SO FEBS Letters (1999), 464(1,2), 71-74] ✓
 CODEN: FEBLAL; ISSN: 0014-5793
 PB Elsevier Science B.V.
 DT Journal
 LA English
 CC 10-6 (Microbial, Algal, and Fungal Biochemistry)
 AB Sialic acids are essential components of cell surface receptors used by influenza viruses. To determine the mol. mechanisms of viral recognition of two major species of sialic acids, N-acetylneuraminic acid (Neu5Ac) and N-glycolylneuraminic acid (Neu5Gc), we tested the binding reactivity of nine human H3 influenza A viruses to sialylglycolipids containing type II sugar chain and different mol. species of terminal sialic acids. All human H3 viruses tested except A/Memphis/1/71 bound both Neu5Ac and Neu5Gc. Nucleotide sequence anal. suggests that amino acids at 143, 155, and 158 are linked to the viral recognition of Neu5Gc.
 ST influenza A virus hemagglutinin sialyl oligosaccharide glycolylneuraminic acid
 IT Influenza A virus
 Protein sequences
 (substitution of amino acid residue in influenza virus hemagglutinin affects recognition of sialyl-oligosaccharides containing N-glycolylneuraminic acid)
 IT Hemagglutinins
 Sialooligosaccharides
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (substitution of amino acid residue in influenza virus hemagglutinin affects recognition of sialyl-oligosaccharides containing N-glycolylneuraminic acid)
 IT 131-48-6, N-Acetylneuraminic acid 1113-83-3, N-Glycolylneuraminic acid
 RL: BSU (Biological study, unclassified); BIOL (Biological study)
 (substitution of amino acid residue in influenza virus hemagglutinin affects recognition of sialyl-oligosaccharides containing N-glycolylneuraminic acid)
 IT 259540-00-6 259540-01-7 259540-02-8
 259540-03-9
 RL: PRP (Properties)
 (substitution of amino acid residue in influenza virus hemagglutinin affects recognition of sialyl-oligosaccharides containing N-glycolylneuraminic acid)
 RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Anders, E; J Virol 1986, V60, P476 HCPLUS
 (2) Bergelson, L; Eur J Biochem 1982, V128, P467 HCPLUS
 (3) Conner, R; Virology 1994, V205, P17
 (4) Fukunaga, K; manuscript in preparation
 (5) Gambaryan, A; FEBS Lett 1995, V366, P57 HCPLUS
 (6) Hasegawa, A; Biosci Biotechnol Biochem 1995, V59, P1091 HCPLUS
 (7) Hasegawa, A; J Carbohydr Chem 1991, V10, P439 HCPLUS
 (8) Hasegawa, A; J Carbohydr Chem 1995, V14, P353 HCPLUS
 (9) Kameyama, A; Carbohydr Res 1990, V200, P269 HCPLUS
 (10) Matrosova, M; Virology 1993, V196, P111 HCPLUS
 (11) Muchmore, E; J Biol Chem 1989, V264, P20216 HCPLUS
 (12) Muthing, J; Glycoconj J 1993, V10, P120 MEDLINE
 (13) Paulson, J; The Receptors 1985, V2, P131 HCPLUS
 (14) Pritchett, T; Virology 1987, V160, P502 HCPLUS
 (15) Rogers, G; Virology 1983, V127, P361 HCPLUS

(16) Rogers, G; Virology 1983, V131, P394 HCPLUS
 (17) Rogers, G; Virology 1989, V173, P317 HCPLUS
 (18) Sabesan, S; J Am Chem Soc 1992, V114, P8363 HCPLUS
 (19) Sauter, N; Biochemistry 1989, V28, P8388 HCPLUS
 (20) Sauter, N; Biochemistry 1992, V33, P9606
 (21) Shaw, L; Biochem J 1989, V263, P355 HCPLUS
 (22) Shaw, L; Biol Chem Hoppe-Seyl 1988, V369, P477 HCPLUS
 (23) Suzuki, T; FEBS Lett 1997, V404, P6192
 (24) Suzuki, Y; Biochim Biophys Acta 1987, V903, P417 HCPLUS ✓
 (25) Suzuki, Y; J Biol Chem 1985, V260, P1362 HCPLUS ✓
 (26) Suzuki, Y; J Biol Chem 1986, V261, P17057 HCPLUS ✓
 (27) Suzuki, Y; Prog Lipid Res 1994, V33, P429 HCPLUS ✓
 (28) Suzuki, Y; Unpublished data
 (29) Suzuki, Y; Virology 1992, V189, P121 HCPLUS ✓
 (30) Tong, N; J Gen Virol 1998, V79, P2425 HCPLUS
 (31) Varki, A; Glycobiology 1992, V2, P25 HCPLUS
 (32) Vliegenthart, J; Sialic Acids 1982, P59
 (33) Weis, W; Nature 1988, V333, P426 HCPLUS
 IT 259540-00-6 259540-01-7 259540-02-8
 259540-03-9
 RL: PRP (Properties)
 (substitution of amino acid residue in influenza virus hemagglutinin
 affects recognition of sialyl-oligosaccharides containing
 N-glycolylneuraminic acid)

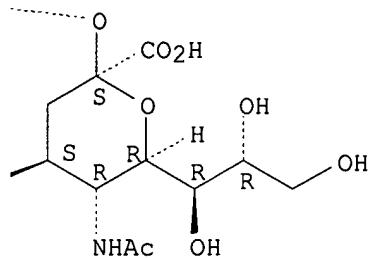
RN 259540-00-6 HCPLUS
 CN β -D-Glucopyranoside, 2-tetradecylhexadecyl O-(N-acetyl- α -neuraminosyl)- (2 \rightarrow 3)-O- β -D-galactopyranosyl- (1 \rightarrow 4)-O-2-(acetylamino)-2-deoxy- β -D-glucopyranosyl- (1 \rightarrow 3)-O- β -D-galactopyranosyl- (1 \rightarrow 4)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

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PAGE 1-B

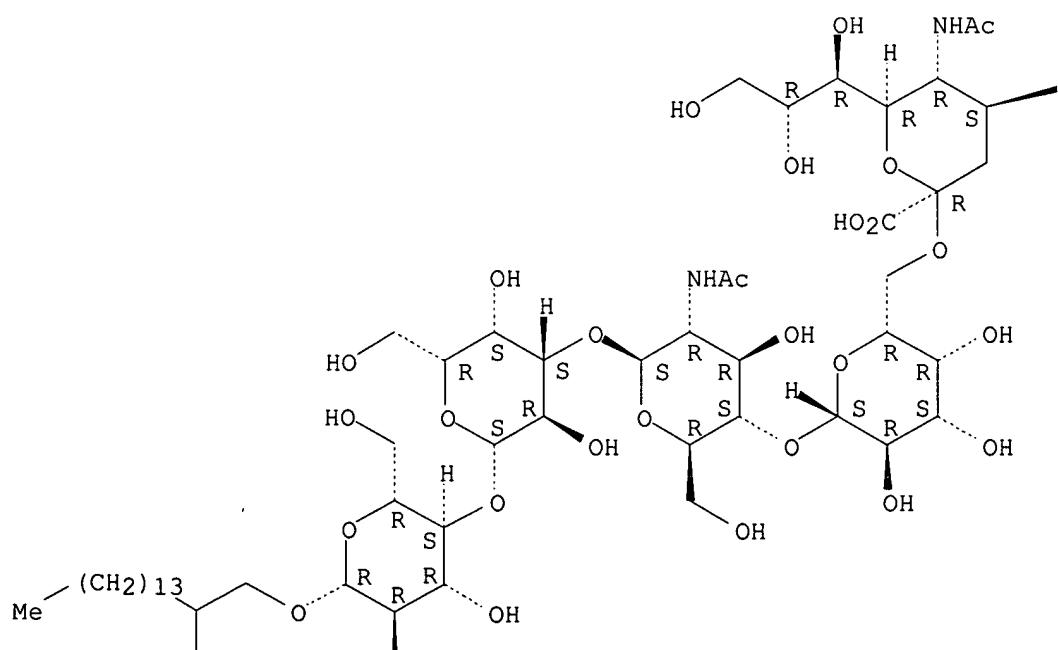


RN 259540-01-7 HCAPLUS

CN β -D-Glucopyranoside, 2-tetradecylhexadecyl O-(N-acetyl- α -neuraminosyl)- (2 \rightarrow 6)-O- β -D-galactopyranosyl- (1 \rightarrow 4)-O-2-(acetylamino)-2-deoxy- β -D-glucopyranosyl- (1 \rightarrow 3)-O- β -D-galactopyranosyl- (1 \rightarrow 4)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

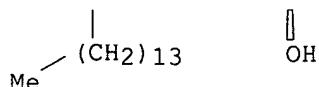
PAGE 1-A



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-OH

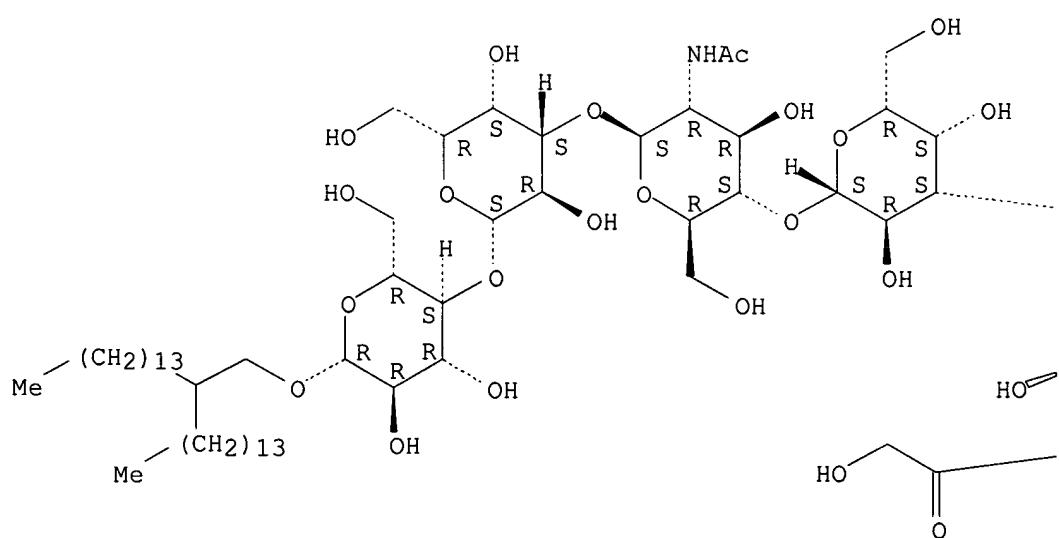
PAGE 2-A



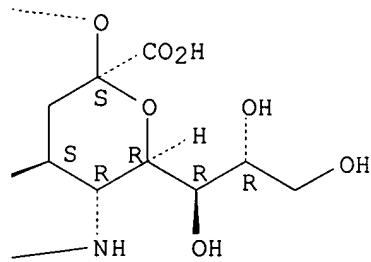
RN 259540-02-8 HCAPLUS
 CN β -D-Glucopyranoside, 2-tetradecylhexadecyl 0-[N-(hydroxyacetyl)- α -neuraminosyl]-(2 \rightarrow 3)-O- β -D-galactopyranosyl-(1 \rightarrow 4)-O-2-(acetylamino)-2-deoxy- β -D-glucopyranosyl-(1 \rightarrow 3)-O- β -D-galactopyranosyl-(1 \rightarrow 4)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

PAGE 1-A



PAGE 1-B

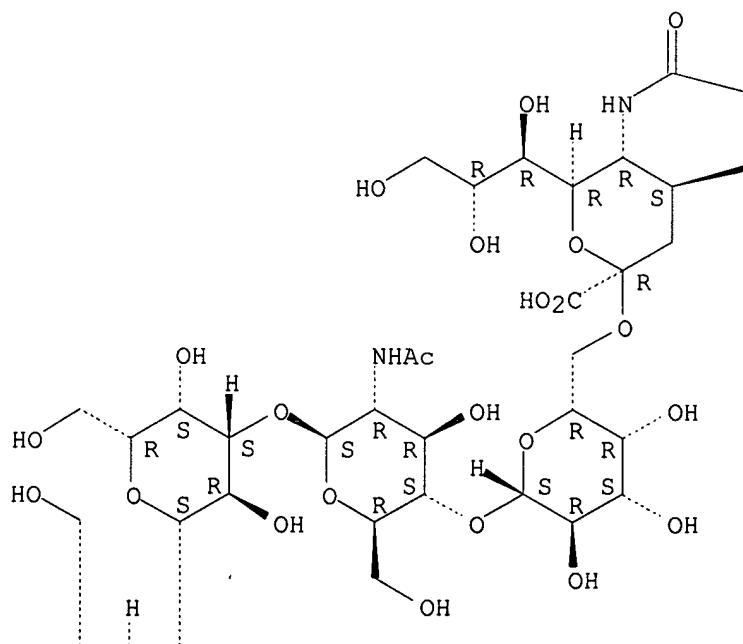


RN 259540-03-9 HCPLUS

CN β -D-Glucopyranoside, 2-tetradecylhexadecyl O-[N-(hydroxyacetyl)- α -neuraminosyl]-(2 \rightarrow 6)-O- β -D-galactopyranosyl-(1 \rightarrow 4)-O-2-(acetylamino)-2-deoxy- β -D-glucopyranosyl-(1 \rightarrow 3)-O- β -D-galactopyranosyl-(1 \rightarrow 4)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

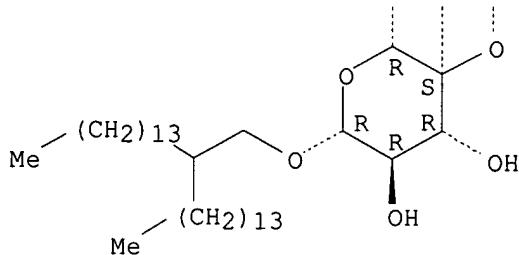
PAGE 1-A



PAGE 1-B



PAGE 2-A



L49 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1995:259932 HCAPLUS
 DN 122:133686
 ED Entered STN: 24 Dec 1994
 TI Preparation of a new sialyl(α 2-6)lactotetraosylceramide as inhibitor
 of influenza viruses
 IN Hasegawa, Akira; Suzuki, Yasuo
 PA Asahi Chemical Ind, Japan
 SO Jpn. Kokai Tokkyo Koho, 14 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese
 IC ICM C07H0015-10
 ICA A61K0031-70

CC 33-8 (Carbohydrates)

Section cross-reference(s): 1

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06247995	A2	19940906	JP 1991-178653	19910624
PRAI JP 1991-178653		19910624		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 06247995	ICM	C07H0015-10
	ICA	A61K0031-70
	IPCI	C07H0015-10 [ICM,5]; A61K0031-70 [ICA,5]

OS CASREACT 122:133686

AB NeuAc. α .2-6Gal β 1-3GlcNAc β 1-3Gal β 1-4Glc β 1-

Cer [I; NeuAc = N-acetylneuraminic acid residue; Gal = galactose residue; GlcNAc = N-acetylglucosamine residue; Glc = glucose residue; Cer = ceramide radical] is prepared I was prepared in many steps from N-acetylneuraminic acid with very detailed synthetic procedures and confirmation of structures, of the final product as well as the

intermediates. The affinity I for influenza virus B was stronger than that of the known gangliosides; it also had strong affinity for influenza virus A; however, it had no affinity for influenza virus C.

ST sialyl lactotetraosylceramide prepn antiviral; ceramide sialyl lactotetraosyl prepn; influenza virus inhibitor
sialyllactotetraosylceramide

IT Virus, animal
(avian influenza A, preparation of a new sialyl(α 2-6)lactotetraosylceramide as inhibitor of influenza viruses)

IT Virus, animal
(influenza, preparation of a new sialyl(α 2-6)lactotetraosylceramide as inhibitor of influenza viruses)

IT Virus, animal
(influenza B, preparation of a new sialyl(α 2-6)lactotetraosylceramide as inhibitor of influenza viruses)

IT 116450-06-7P 134409-18-0P 136412-12-9P 136412-13-0P 136412-14-1P
136412-18-5P 136412-27-6P 136412-28-7P 136412-29-8P 159861-35-5P
159861-36-6P 159861-37-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(intermediate in preparation of a new sialyl(α 2-6)lactotetraosylceramide as inhibitor of influenza viruses)

IT 136412-30-1P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of a new sialyl(α 2-6)lactotetraosylceramide as inhibitor of influenza viruses)

IT 98-88-4, Benzoyl chloride 131-48-6, N-Acetylneuraminic acid 545-06-2,
Trichloroacetonitrile 3908-55-2, (Methylthio)trimethylsilane
77165-65-2, Octadecanoyl azide 103348-50-1 121360-14-3 136520-48-4

RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant in preparation of a new sialyl(α 2-6)lactotetraosylceramide as inhibitor of influenza viruses)

=>